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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,448	06/02/2005	Rob A. Beuker	NL02 1323 US	2666
65913	7550	09/03/2009	EXAMINER	
NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			MA, CALVIN	
			ART UNIT	PAPER NUMBER
			2629	
			NOTIFICATION DATE	DELIVERY MODE
			09/03/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary

Application No.

10/537,448

Applicant(s)

BEUKER ET AL.

Examiner

CALVIN C. MA

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 and 5-16 are rejected 35 U.S.C. 103(a) as being obvious over Hunter et al. (US Patent: 7,071,978) in view of Brett (US Patent 6,026,179).

As to claim 1, Hunter teaches a method for improving the perceived resolution of a color matrix display with at least one pixel, comprising the steps of (i.e. the display device 90 is able to display a full color JPEG display therefore, it must have at least one pixel) (see Fig. 6, Col. 7, Lines 15-53):

subdividing an incident color channel signal to said pixel into a first and second signal component (i.e. the color channel R G B of the original image that is taken by the camera that is converted to high frequency and low frequency component and then displayed on the screen 90) (see Fig. 5-6, Col. 5, Lines 35-50),

subsequently recombining said first and second signal components into an exiting, modified color channel signal (i.e. the high and low frequency components are

separately treated and then recombined into a final image which is then displayed on the display 90) (see Fig. 5-6, Col. 7, Line 1-53).

However, Hunter does not explicitly teaches a gain factor being based upon the incident color channel signal's contribution to total luminescence of the display, Brett teaches applying a gain factor (i.e. conventional gain-white level, lift-black level, "master" modification resulting in a tonal change, and "differential" modification where one of two of the color table is changed; this relates to the selective ability of the correction system to customized the LUT 3 where the gain factor of the color channel can be set to any level based on the user programming) to one of said signal components (i.e. the gain that is applied with only one table change that affect that color) (see Brett Fig. 1, Col. 5, Lines 45-Col. 6, Line 26), the gain factor being based upon the incident color channel signal's contribution to total luminescence of the display (i.e. the gain factor is created together with the master luminance and saturation control in the matrix, where the user can clearly set the color modification to any setting including adjusting the color based on the luminance level) (see Brett Fig. 1) (Col. 4, Lines 43-54),

Therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have utilized the comprehensive color correction algorithm of Brett in the overall display system of Hunter in order to allow for further picture enhancement capability other than color correction (see Brett Col. 1, Line 66-Col. 2, Line 2).

As to claim 7, see claim 1 above, claim 7 is analyzed to differ from claim 1 only in the limitation of a color matrix display device, since Hunter teaches a color matrix display device, it is rejected on the same ground (i.e. the camera device having a image display 90) (see Fig. 6).

As to claim 12, Hunter and Brett teach a color matrix display device (i.e. the camera device having an image display 90) for displaying images, the device comprising:

- a plurality of pixels controlled by applied color channel signals (i.e. the matrix display system 90); and

- a controller (72) including:

- a subdivision unit to subdivide, for separated color channel signals, each color channel signal into a first and second signal component (i.e. the function block that separate the high and low components of the image data),

- a gain factor application (i.e. the quality gain factor application DSP process) to apply, for each color channel signal (i.e. all three color R G B), a gain factor to one of said components, the gain factor (i.e. the gain that is applied with only one table change that affect that color) (see Brett Fig. 1, Col. 5, Lines 45-Col. 6, Line 26) having a value that is inversely proportional to the contribution of the color channel signal to the total luminance of the color matrix display device (i.e. the gain factor is created together with the master luminance and saturation control in the matrix, where the user can clearly

set the color modification to any setting including adjusting the color based on the inverse luminance level of a particular color) (see Brett Fig. 1) (Col. 4, Lines 43-54),
and

a recombination unit to recombine, for each color channel signal, said first and second signal component into a modified color channel signal that is used to control said plurality of pixels (i.e. the high and low frequency components are separately treated and then recombined into a final image which is then displayed on the display 90) (see Hunter Fig. 5-6, Col. 7, Line 1-53).

As to claim 2, Hunter and Brett teaches a method according to claim 1, wherein said first and second signal components are a low-pass component and a high-pass component, respectively (i.e. the high and low frequency components are separately treated and then recombined into a final image which is then displayed on the display 90) (see Hunter Fig. 5-6, Col. 5, Line 33-54).

As to claim 3, Hunter and Brett teach a method according to claim 2, wherein said gain factor is applied to said high-pass component (i.e. the gain factor is applied to the high components in the form of the color correction matrix during color correct phase) (see Hunter Fig. 5-6, Col. 5, Line 33-54).

As to claim 5, see claim 12 above, claim 5 is rejected for the same reason as claim 12.

As to claim 6, Hunter and Brett teach a method according to claim 1, further comprising the step of: transmitting said exiting, modified color channel signal to a delay (i.e. the image is placed into long term memory 88 from the microprocessor/DSP 72) (see Fig. 11) and up or downsampling block in order to provide the modified color channel signal with a suitable delay and scaling (i.e. the image is retrieved from the Long term memory 88 back into the microprocessor/DSP 72 and then display on the display 90, in this process the color image must be up or down sample to be properly fitted onto the display regardless of the image size on memory) (see Hunter Fig. 5-6, Col. 5, Lines 33-57).

As to claim 8, Hunter and Brett teach color matrix display device as in claim 7, being arranged to perform the method according to claim 1 (i.e. since the same digital camera system satisfy the limitation of both claim 1 and 7 it also satisfy the combination of the two) (see Fig. 5).

As to claim 9, Hunter and Brett teach a method according to claim 1, wherein the step of subdividing each of separate color channel signals for an image into a first and second signal component (i.e. the high and low frequency components are separately

treated and then recombined into a final image which is then displayed on the display 90) (see Fig. 5).

As to claim 10, Hunter and Brett teach a method according to claim 1, wherein the step of subdividing each of separate color channel signals for an image into a first and second signal component (i.e. the high and low frequency color signal components are separately treated) (see Fig. 5-6).

wherein applying a gain factor includes applying a gain factor to each separate color channel signal that is inversely proportional to the contribution of said separate color channel signal to the total luminance of the color matrix display (i.e. the gain factor is created together with the master luminance and saturation control in the matrix, where the user can clearly set the color modification to any setting including adjusting the color based on the inverse luminance level of a particular color) (see Brett Fig. 1) (Col. 4, Lines 43-54).

As to claim 11, Hunter and Brett teaches a method according to claim 1, wherein the step of subdividing includes subdividing a number N (i.e. $N=2$) of different color channel signals, and

the step of applying a gain factor includes applying a gain factor, for each color channel signal, that is about equal to the value of $1/2$ multiplied by the reciprocal contribution of the channel signal to the total luminance of the color matrix display ((i.e. the gain factor is created together with the master luminance and saturation control in

the matrix, where the user can clearly set the color modification to any setting including adjusting the color based on the inverse luminance level of a particular color, an artisan could appreciate that the user defined adjustment would be able to have a half factor in case of color adjustment matrix that result in such a factor being realized) (see Brett Fig. 1) (see Hunter, Col. 4, Lines 43-54)).

As to claims 13 and 15, Hunter and Brett teaches wherein applying a gain factor includes applying a gain factor that removes a visible aliasing term from the incident color channel signal (i.e. Hunter teaches the usage of the gain application method will remove color aliasing in the image) (see Hunter Col. 3, Lines 33-40).

As to claims 14 and 16, Hunter and Brett teaches wherein applying a gain factor includes applying a gain factor that sets constants of a visible aliasing term for the incident color channel signal to zero to remove a visible aliasing term from the incident color channel signal (i.e. Hunter teaches the usage of the gain application method will remove color aliasing in the image) (see Hunter, Col. 3, Lines 33-40).

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter in view of Brett as applied in claim 1, and further in view of Pollard (US Patent: 7,082,218).

As to claim 4, Hunter and Brett teaches a method according to claim 2, but is silent on using low or high pass filter, instead it applied one integrated filter to create the

and low pass effect. Pollard teaches wherein said low-pass component is realized by means of a low-pass filter (i.e. low-pass filter) (see Col. 4, Lines 30-50), and said high-pass component is realized by means of a high-pass filter (i.e. the process of subtracting the result of the low-pass filter result from the raw pixel data is equivalent to high-pass filtering as the low-pass filter is in fact reverse to arrived at high frequency components), said low-pass and high-pass filters being complementary (i.e. since the to operation obtain the high and low frequency components for the same pixel data they are complementary in nature with one helping to derive the other) (see Fig. 1, Col. 4, Lines 1-60).

Therefore, it would have been obvious for one of ordinary skill in the art at the invention was made to have utilized the low-pass and high-pass filter of Pollard in place of the integrated filter of Hunter, in order to create a solution that is more versatile and able to use different type of component to achieve the same effect of filtering (see Pollard Col. 4 Line 30-Col. 5 Line 44).

Response to Arguments

4. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Calvin Ma whose telephone number is (571)270-1713. The examiner can normally be reached on Monday - Friday 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571)272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Calvin Ma
August 26, 2009

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